METABOLIC CELL LABELING FOR CANCER TARGETING AND IMMUNOENGINEERING

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BIO

I am currently a Wyss Technology Development Fellow at Harvard University, aiming to integrate my research background in chemistry, materials science, and chemical biology with cancer immunotherapy here. More specifically, I am exploring approaches to modulate or engineer cancer cells and immune cells in vivo, in order to improve and innovate current immunotherapies for cancers and other immune-related diseases. Before my move to Harvard, I earned my Ph.D. degree in Materials Science and Engineering at the University of Illinois at Urbana-Champaign (08/2012-06/2016), and my Bachelor's degree in Polymer Science and Engineering at the University of Science and Technology of China (08/2008-06/2012).

ABSTRACT

Cancer immunotherapy has achieved significant clinical success in the past few years, but there remains tremendous room for the development of new-generation therapies with more robust and persistent antitumor immune responses. My research interests are largely directed towards understanding how cancer cells and immune cells can be modulated or engineered from a single cell level, in order to develop effective therapies for cancers and other diseases. I will divide my talk into three parts. In the first part, I will talk about how we can use metabolic sugar labeling for cancer-selective labeling and targeting. In the second part, I will introduce the use of metabolic sugar labeling for in vivo labeling, tracking, and targeted modulation of immune cells. Lastly, I will present a materials-focused project that aims to develop an antigen-free cancer vaccine for poorly-immunogenic solid tumors.

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